

Please type a plus sign (+) inside thi



PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031


U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO				Complete If Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				Application Number	<del>10/109,756</del> 10/109,756
				Filing Date	March 29, 2002
				First Named Inventor	Paul Vincent Fish
				Group Art Unit	1626
				Examiner Name	Golam M. Shameem
				Attorney Docket Number	PC10939A
Sheet	1	of	5		

[illegible]

FOREIGN PATENT DOCUMENTS						
Examiner Initials <sup>1</sup>	Cite No. <sup>1</sup>	Foreign Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Office <sup>2</sup>	Number <sup>4</sup>			
GS ↓ GS		WO	99/45927		Miller, et al	09/16/1999
		WO	97/05865		Brenner, et al	02/20/1997
		WO	01/47901		Bailey, et al	07/05/2001
		WO	95/23790		Frazee, et al	09/08/1995
		WO	00/37436		Billedeau, et al	06/29/2000
		WO	00/51993		Cheng, et al	09/08/2000

Examiner Signature		Date Considered	8/10/04
-----------------------	---	--------------------	---------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.**

Please type a plus sign (+) inside this box → +

PTO/SB/08B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO			<b>Compleat If Known</b> 101643,476		
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>			Application Number	<del>10169,756</del>	
			Filing Date	March 29, 2002	
			First Named Inventor	Paul Vincent Fish	
			Group Art Unit	1626	
			Examiner Name	Golam M. Shameem	
			Attorney Docket Number	PC10939A	
Sheet	2	of	5		

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials <sup>1</sup>	Cite No. <sup>2</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
GS		DANKWARDT, et al, "Solid-Phase Synthesis of Di- and Tripeptidic Hydroxamic Acids as Inhibitors of Procollagen C-proteinase", Bioorganic & Medicinal Chemistry Letters 10 (2000); pp 2513-2516	
		FRAY, et al, "Selectivity of Inhibition of Matrix Metalloproteases MMP-3 and MMP-2 by Succinyl Hydroxamates and their Carboxylic Acid Analogues is Dependent on P3' Group Chirality", Bioorganic & Medicinal Chemistry Letters 11 (2001); pp 567-570	
		FESSLER, et al, "Biosynthesis of Procollagen", Ann Rev. Biochem. 1978, Vol. 47; pp 129-162	
		GOLDBERG, et al, "Procollagen Peptidase: Its Mode of Action on the Native Substrate", Cell., 1975, Vol. 4; pp 45-50	
		KESSLER, et al, "A Method for Assaying the Activity of the Endopeptidase Which Excises the Nonhelical Carboxyterminal Extensions from Type I Procollagen", Analytical Biochemistry, 1978, Vol. 86, pp 461-169	
		DUKSIN, et al, "The Role of Glycosylation in the Enzymatic Conversion of Procollagen to Collagen: Studies Using Tunicamycin and Concanavalin A", Archives of Biochemistry and Biophysics, 1978, Vol. 185, No. 2; pp 326-332	
		LEUNG, et al, "Separate Amino and Carboxyl Procollagen Peptidases in Chick Embryo Tendon*", The Journal of Biological Chemistry, 1979, Vol. 254, No. 1, pp 224-232	
		DAVIDSON, et al, "Procollagen Processing", Eur. J. Biochem., Vol. 100, 1979, pp 551-558	
		NJIEHA, et al, "Partial Purification of a Procollagen C-Proteinase. Inhibition by Synthetic Peptides and Sequential Cleavage of Type I Procollagen", Biochemistry, 1982, Vol. 21, pp 757-764	
		HOJIMA, et al, "Type I Procollagen Carboxyl-terminal Proteinase from Chick Embryo Tendons", The Journal of Biological Chemistry, 1985, Vol. 260, No. 29, pp 15996-16003	
GS		KESSLER, et al, "Type I procollagen C-proteinase from mouse fibroblasts", Eur. J. Biochem., 1989, Vol. 180, pp 115-121	

Examiner Signature		Date Considered	8/10/04
--------------------	--	-----------------	---------

<sup>1</sup> EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>2</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside the box → ☐

PTO/SB/08B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO			Complete if Known 101643,476	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			Application Number	10/109,756
			Filing Date	March 29, 2002
			First Named Inventor	Paul Vincent Fish
			Group Art Unit	1626
			Examiner Name	Golam M. Shameem
			Attorney Docket Number	PC10939A
Sheet	3	of	5	

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
GS		KESSLER, et al, "Partial Purification and Characterization of a Procollagen C-Proteinase from the Culture Medium of Mouse Fibroblasts", Collagen Rel. Res., 1986, Vol. 6; pp 249-266
		FERTALA, et al, "Self-assembly into Fibrils of Collagen II by Enzymic Cleavage of Recombinant Procollagen II", The Journal of Biological Chemistry, 1994, Vol. 269, No. 15; pp 11584-11589
		RYHANEN, et al, "Conversion of Type II Procollagen to Collagen in Vitro: Removal of the Carboxyl-Terminal Extension Is Inhibited by Several Naturally Occurring Amino Acids, Polyamines, and Structurally Related Compounds", Archives of Biochemistry and Biophysics, 1982, Vol. 215, No. 1, pp
		PILCHER, et al, "The Activity of Collagenase-1 Is Required for Keratinocyte Migration on a Type I Collagen Matrix", The Journal of Cell Biology, 1997, Vol. 137, No. 6, pp 1445-1457
		AGREN, M.S., "Gelatinase activity during wound healing", British Journal of Dermatology, 1994, Vol. 131, pp 634-640
		SALO, et al, "Expression of Matrix Metalloproteinase-2 and -9 during Early Human Wound Healing", Laboratory Investigation, 1994, Vol. 70, No. 2; pp 176-182
		TARABOLETTI, et al, "Inhibition of Angiogenesis and Murine Hemangioma Growth by Batimastat, a Synthetic Inhibitor of Matrix Metalloproteinases", Journal of the National Cancer Institute, 1995, Vol. 87, No. 4; pp 293-299
		ZASK, et al, "Inhibition of Matrix Metalloproteinases: Structure Based Design", Current Pharmaceutical Design, 1996, Vol. 2; pp 624-661
		BECKETT, et al, "Recent advances in matrix metalloproteinase inhibitor research", DDT, 1996, Vol. 1, No.1; pp 16-26
		PROKOP, et al, "Heritable Diseases of Collagen", The New England Journal of Medicine, Vol 344, No. 6, pp 376-383
GS		KUHN, "The Classical Collagens: Types I, II, and III", Structure and Function of Collagen Types, 1987; pp 1-42

Examiner Signature	<i>Golam M. Shameem</i>	Date Considered	8/16/04
--------------------	-------------------------	-----------------	---------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box → +

PTO/SB/088 (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO				<b>Complete if Known</b> 101643,476	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				Application Number	
				<del>10109,756</del>	
				Filing Date	
				March 29, 2002	
				First Named Inventor	
		Paul Vincent Fish			
Group Art Unit		1626			
Examiner Name		Golam M. Shameem			
Attorney Docket Number		PC10939A			
Sheet	4	of	5		

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials <sup>1</sup>	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	12
GS		EVANS, et al, "A General Method for the Synthesis of Enantiomerically Pure Beta-Substituted, Beta-Amino Acids through alpha-Substituted Succinic Acid Derivatives", J. Org. Chem., 1999, Vol. 64; pp 6411-6417	
		SIMONEAU, et al, "Discovery of Non-peptidic P2-P3 Butanediamide Renin Inhibitors with High Oral Efficacy", Bioorganic & Medicinal Chemistry, 1999, Vol. 7, pp 489-508	
		YAMAMOTO, et al, "Inhibition of Membrane-Type 1 Matrix Metalloproteinase by Hydroxamate Inhibitors: An Examination of the Subsite Pocket", J. Med. Chem., 1998, Vol. 41; pp 1209-1217	
		STEINMAN, et al, "The Design, Synthesis, and Structure-Activity Relationships of a Series of Macrocyclic MMP Inhibitors", Bioorganic & Medicinal Chemistry Letters 8, 1998, pp 2087-2092	
		VU, et al, "Nonpeptidic SH2 Inhibitors of the Tyrosine Kinase Zap-70", Bioorganic & Medicinal Chemistry Letters 9, 1999, pp 3009-3014	
		FRAY, et al, "Application of Epimerisation-Free Amide Coupling Conditions to the Synthesis of Matrix Metalloprotease Inhibitor Intermediates", Tetrahedron 54, 1998; pp 13825-13832	
		FLOYD, et al, "Rapid Synthesis of Matrix Metalloproteinase Inhibitors via Ugi Four-Component Condensation", Synlett, 1998; pp 637-639	
		McClure, et al, 1998, Vol. 8, No. 2, pp 143	
		Chem. Abs., 1997:594709	
		BORNSTEIN, et al, "The Proteins", Academic Press, New York, 1979, pp 412-632	
GS		KIVIRIKKO, et al, "Extracellur Matrix Biochemistry", Elsevier Science Publishing Co., Inc., New York, pp 83-118	

Examiner Signature	
Date Considered	8/16/04

<sup>1</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

